

June 22, 1995

Reply to
Attn. of: WD-139

Memorandum

SUBJECT: Review of Alaska Department of Environmental
Conservation (ADEC) 1994 Section 303(d) List
Crow Creek and Garrison Slough

TO: File

FROM: Curry D. Jones

This letter summarizes the communication I had with EPA personnel, as well as, other federal agencies to determine whether Crow Creek should be listed on the 303(d) list of impaired water bodies.

1) I spoke with the U.S. Bureau of Mines in Juneau, AK to determine if any recent evaluation on Crow Creek had been completed with the last six months. Their most recent evaluation on water testing was during the summer of 1994. Unfortunately, results could not be released because the U.S. Forest Service contracted with the Bureau of Mines to do this evaluation. He advised me to contact the U.S.F.S.

2) I spoke with Karol Huber of the U.S. Forest Service (Chugash National Forest). Her best professional judgement was that even though Crow Creek has met water quality standards, she thinks that an assessment of this Creek should be conducted in order that the appropriate decision can be made about water body listing. Past mining practices have stampered the Creeks growth. Pellets of mercury have been spotted in the creek which raise some questions about the potential risk of mercury effecting life down stream. Arsenic is a naturally occurring mineral in that area, but tailing from previous mining practices have been found in the creek. She said that she would send me the latest information on the Creek.

3) I spoke with Dave Sturdevant on Jan. 17. and he proessed an interesting statement. Mrs. Cynthia Toohey owns one of the abandoned mines which lies several miles downstream from Brenner Mine and Monarch Mine. This mine is currently being used as a

amusement type facility whereby visitors may come and see what actually happens in the mining process. Mrs Toohey has expressed her concerns via comment letter during the public comment period. Since Mrs. Toohey owns the mine, it would really would appease her to not have this waterbody listed.

4) I received the information from Karol Huber of the U.S. Forest Service. The document contained several different pieces of information which included a report on Brenner Mine and Monarch Mine. These two mines lie in close proximity of the Creek. A summary of the Environmental Hazard were given for soil and water. Recommendation concluded that water quality was not effected by past placer mining activities.

5). Since data on this Creek is very limited, this waterbody should not be listed on the final 303(d) list.

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
1994 STATEWIDE WATER QUALITY ASSESSMENT

WBFile
200C

NAME OF WATERBODY: Crow Creek

Location or Lat/Long: SW 1/4 NW 1/4 Sec 16, T11N, R2E, Seward Meridian.
8 miles from Girdwood near headwaters of Crow Creek.

Is the waterbody in a national or state park, monument, refuge, preserve, or similar area?:

☒ Yes / ☐ No / Name: Chugach National Forest

Waterbody Type:

☒ River/Stream

☐ Lake

☐ Fresh Wetland

☐ Tidal Wetland

☐ Estuary

☐ Coastal Shoreline

☐ Groundwater

Waterbody Size:

_____ Miles

_____ Acres

_____ Acres

_____ Acres

_____ Square Miles

_____ Miles

Segment of Waterbody Addressed:

From: _____

To: _____

Other Description: _____

Size of Segment: _____

Period of Assessment, From: July 18, 1990 To: August 31, 1990

Assessment completed by: Chris Roe, Bureau of Mines and Carol Huber, Forest Service

Type of Documentation (attach if possible):

☐ Water quality data

☐ Documented oil spill

☐ NOV / Enforcement action

☒ Photos with documentation

☐ Fish / Habitat survey

☒ Written report

☒ Field notes

☐ Overflight

☒ Observation

☒ Other (please describe below)

Assessment based on: ☐ Monitored water quality data

☒ Evaluated (Best professional judgement)

Describe Source and Nature of Pollution, Documentation Provided and Other Comments: Abandoned Mine Inventory

Brenner Mine workings and Mill site.

Pollutants: Tiny beads of mercury can be seen in mill tailings
on stream bank. Two shafts 3-5 ft above stream, are discharg-
ing into the stream, may be carrying heavy metals.

Mine adjacent to the popular Crow Pass hiking trail.
Sample results are attached.

RESPONDENT INFORMATION:

Name: Carol S Huber Phone: 271-2541 Date: 3-15-94

Employer: USDA Forest Service Dept: Minerals/Sols/Water Title: Forest Geologist

Address: 3301 C St Ste 300, Anchorage, AK 99503

Education/Experience: BS Geology/Water Quality Study/Abandoned Mine Inventory

their way to or from Eagle River, 26 miles away. A few were hunters looking for game. Many people visit this area thus, its hazards should be given high priority for remediation. See figure 2.

B. PHYSICAL HAZARDS

1. Shafts, pits, trenches;

The portal of the inclined shaft was found next to and 2 feet above the creek. The shaft is flooded up to the portal. The original dimensions were about 5 feet high by 5 feet wide, but soil and debris have sloughed down from above and partially blocked the portal. It appears that a few of the mine timbers are holding up this debris. If this is the case, the timbers could collapse if someone happened to stand on the debris, causing them to fall into the flooded shaft. This is a dangerous situation. Also, the shaft appears to be supported by closely spaced timbers along its length, indicating that the material around it is not very stable. This would be dangerous for anyone attempting to descend into the shaft, because after being underwater for at least 50 years, the timbers are probably rotten and could possibly fail at any time. See figure 3.

2. Adits and underground workings;

The adit is on the east side of the creek several hundred feet south of the shaft and mill site. The portal is 3 feet wide by 3 feet high and partially flooded. An iron pipe at the portal was discharging water at a rate of approximately 1 gallon per minute. Further investigation of this adit was not done because of its small size. The reported adit on the west side of the creek was not located. More than likely, it has caved in since it was last used.

3. Highwalls;

No man-made highwalls are present at the mine, however, the topography of the area is very steep and in places almost vertical.

4. Impoundments;

No impoundments are at the site.

5. Unexpended explosives;

We found no abandoned explosives at the site.

6. Buildings, equipment;

No buildings remain at the site, however, many pieces of equipment are present, especially in the creek by the mill site. These include a jaw crusher, flat belt pulleys and axles, two pneumatic drills, steel cable, and pieces of scrap metal. See figure 4.

7. Unstable tailings piles or ditches;

No unstable tailings piles are at this site.

8. Timber, ladders;

The inclined shaft contains many timber supports. Practically all of this timber is under water and rotten. The timbers appear to be holding up debris that has fallen into the entrance of the shaft. As this wood rots and loses its strength, it will allow the debris and anyone standing on it to fall into the flooded shaft.

9. Mine gases;

The open adit was not entered because it was so small and wet. The air quality was not checked.

10. Miscellaneous physical hazards;

None.

C. ENVIRONMENTAL HAZARDS

1. Mercury, arsenic, cyanide;

a. Soil

Close examination of the soil at the mill site showed several tiny beads of mercury. One soil sample was collected from the area 2 feet below the ledge where mill had been located. The result of the laboratory analysis is as follows;

Element	Concentration (parts per million)
Mercury	25.01

This is not as high as one would expect when native mercury is visible in the sample. This may be due to the sampling method used at the laboratory when doing the analysis. Normally, the laboratory technician will thoroughly mix a soil sample and take 2 grams for the actual analysis. Elemental mercury will not disperse evenly through a sample. Thus, a much larger sample of the soil must be analyzed, to increase the probability of analyzing soil which has elemental mercury in it.

The concentration of 25.01 parts per million plus the presence of elemental mercury, however, indicate that very anomalous amounts of mercury are present and should be mitigated.

b. Water

Three water samples were collected from Crow Creek, as follows:

- 1) Sample 1- 100 feet upstream from the mill site,
- 2) Sample 2- next to the mill site, and
- 3) Sample 3- 100 feet downstream from the mill site. See figure 2.

The results are as follows;

Sample	Element	Concentration (parts per million)
1	Arsenic	<0.08
2	Arsenic	<0.08
3	Arsenic	<0.08
1	Mercury	<0.02
2	Mercury	<0.02
3	Mercury	<0.02

These results indicate that the concentrations of arsenic and mercury are very low and do not change at all when passing by the mill site.

2. Acid forming materials;

A pipe at the portal of the adit is discharging water but there was no visible evidence of acid drainage in the area.

3. Heavy metals;

No evidence of heavy metals was found except arsenic and mercury which are discussed above.

4. Asbestos;

There is no indication of asbestos in the area.

5. Radioactive materials;

The underground workings were not tested for radon.

6. Sedimentation;

No sedimentation has occurred at the site.

7. Miscellaneous environmental hazards;

None.

D. RECOMMENDATIONS

As a result of the investigation at the Brenner Mine, the following are recommended;

1. Warning signs could be displayed around the property to advise the public about the dangerous conditions which are present, especially the inclined shaft.

2. A chain link fence could be installed around the inclined shaft as a temporary means of keeping people away from this hazard until a permanent closure is completed.

3. Permanent closure of these mine openings could be considered because they are very hazardous, they will be very expensive to reopen, and there is no known claimant for this property. The openings could be closed by blasting them shut or by backfilling them with earth.

4. The smaller pieces of scrap lumber could be disposed of by burning or burying. The scrap metal could be buried or recycled. The large pieces of equipment, such as the crusher and pneumatic drills could be put on display and stabilized so as not to be a toppling or falling hazard.

5. Further soil sampling could be done to determine the extent of mercury occurrence in the soil in the mill site. If native mercury is in the soil at the mill site, it is very likely to be in the adjacent creek, too. At least 10 soil or sediment samples should be collected around the mill site and in the

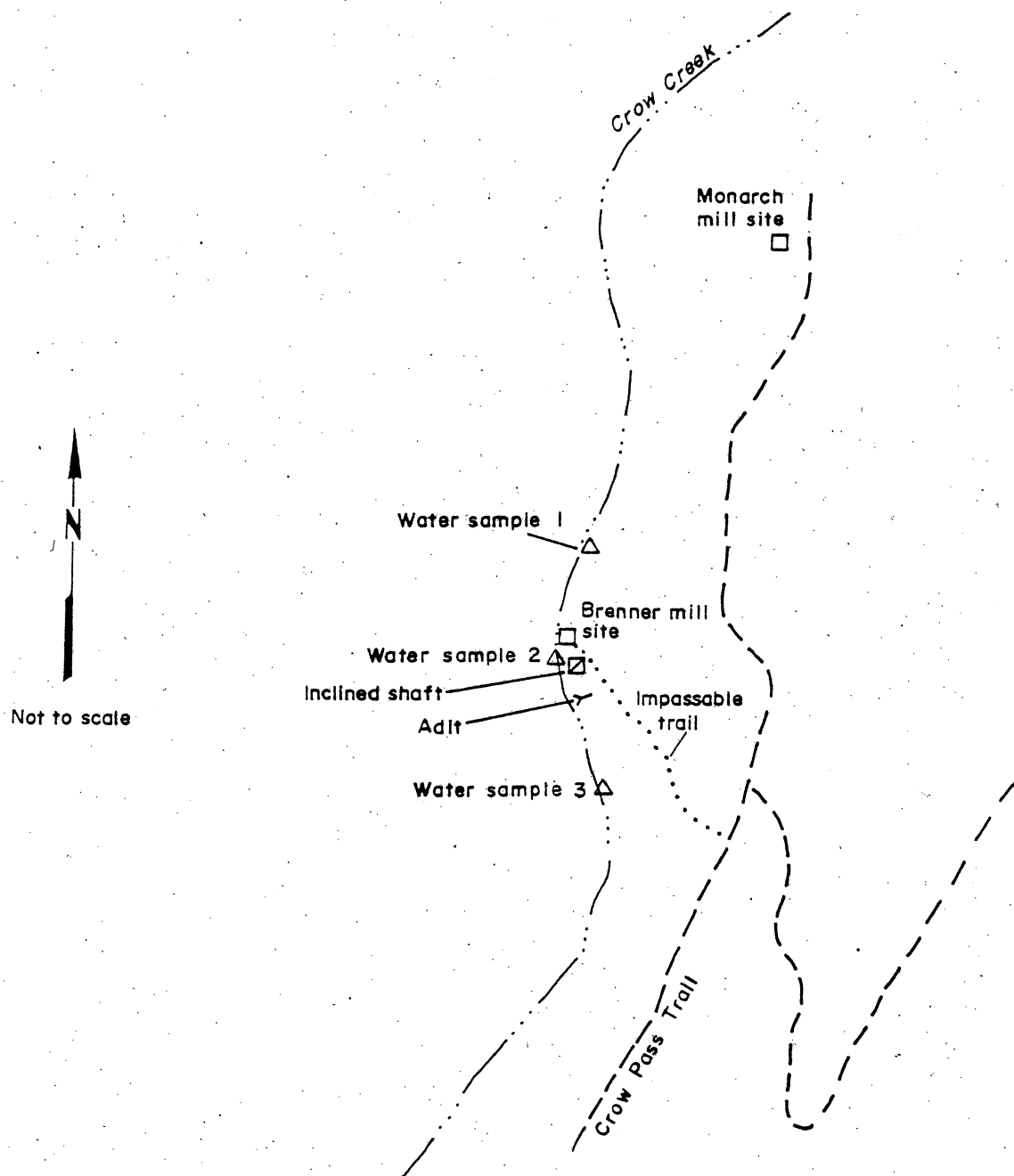


Figure 2.- Sketch map showing the main features of the Brenner Mine area and the locations of the water samples.



CHEMICAL & GEOLOGICAL LABORATORIES OF ALASKA, INC.

5633 B STREET • ANCHORAGE, ALASKA 99518 • TELEPHONE (907) 562-2343

FEDERAL TAX I.D. #92-0040440

ANALYSIS REPORT BY SAMPLE for Work Order # 29056

Date Report Printed: OCT 29 90 @ 19:19



Client Sample ID: ANC MH 3305

PWSID : UA

Collected @ hrs:

Received OCT 3 90 @ 15:30 hrs.

Preserved with : AS REQUIRED

Analysis Completed : OCT 10 90

Laboratory Supervisor : STEPHEN C. EDE

Released By : *Stephen C. Ede*

Client Name : US FOREST SRV *ANCHORAGE

Client Acct : USFRSTP

P.O.# NONE RECEIVED

Req #

Ordered By : CAROL HUBER

Send Reports to:

1) US FOREST SRV *ANCHORAGE

2)

Special
Instruct:

Chemlab Ref #: 904046 Lab Smpl ID: 5

Matrix: SOIL

Parameter Tested

Result

Units

Method

Allowable
Limits

MERCURY

25.01

mg/kg

AA

Sample
Remarks:

1 Tests Performed

ND- None Detected

NA- Not Analyzed

* See Special Instructions Above

** See Sample Remarks Above

LT-Less Than, GT-Greater Than

UA-Unavailable

WB File
20(b)

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

1988 STATEWIDE WATER QUALITY ASSESSMENT

*** WATERBODY ***

Page 1 of 5

Name of Waterbody: Crow Creek *Galaxie Creek* ID#: 190 20401 013
Type/Size: ☒ River/Stream 6 Miles *flows to Glacia Creek* GS#: 3041 ☒ N ☐ L ☐ M ☐ S
☐ Lake Acres/Hectares HWQ: Y ☐ N
☐ Fresh Wetland Acres/Hectares WQL: 0 - ☐ N
☐ Tidal Wetland Acres/Hectares ☐ 1 - ☐ PS
☐ Estuary Square Miles ☐ 2 - ☐ NPS
☐ Coastal Shoreline Miles ☐ 3 - ☐ WQS
☐ Groundwater Miles ☐ 4 - ☐ Con/Enf
USGS Hydrological Unit #: 190-20401 [ADEC Use Only]
Location or Lat/Long: Anchorage, AK *LD, PM*
Is the waterbody in a national or state park, monument, refuge, -
preserve, or similar area?: ☐ Yes, ☒ No, Name

*** ASSESSMENT ***

Assessment Date: Yr 88 , Mo 04 / By James Cross, MOA/DHHS *R2*
Sampling: Begin Yr , Mo / End Yr , Mo / By
Reference for Data: MOA/DHHS
Assessment Type: Assessment Category:
☐ 1 Qualitative, land use sources ☐ Monitored (Data)
☐ 1 Qualitative, complaints/2nd hand ☒ Evaluated (Judgement)
☐ 2 Predictive models, unverified
☐ 3 Calibrated models
☐ 4 Fixed station data, Bio or Chem
☐ 5 Effluent toxicity testing
☒ 6 Limited site visit
☐ 7 Intensive field Assessment
Next Planned Assessment: Yr , Mo / By
Comments:

Size-A Size-M Support Partial Not-Sup Cause-% Size-10 Size-No Why?

Meets Clean Water Act Goals:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Fishable | <input type="checkbox"/> Swimmable |
| <input type="checkbox"/> Not Fishable | <input checked="" type="checkbox"/> Not Swimmable |
| <input type="checkbox"/> Fishable Not Attainable | <input type="checkbox"/> Swimmable Not Attainable |

Impaired or Threatened Uses:

IMP THR - FRESHWATER

- | |
|--|
| <input checked="" type="checkbox"/> <input type="checkbox"/> Drinking |
| <input type="checkbox"/> <input type="checkbox"/> Agriculture |
| <input type="checkbox"/> <input type="checkbox"/> Aquaculture |
| <input type="checkbox"/> <input type="checkbox"/> Industry |
| <input checked="" type="checkbox"/> <input type="checkbox"/> Recreation, Contact |
| <input checked="" type="checkbox"/> <input type="checkbox"/> Recreation, Secondary |
| <input type="checkbox"/> <input type="checkbox"/> Fish, Shellfish, Wildlife |

IMP THR - MARINE

- | |
|--|
| <input type="checkbox"/> <input type="checkbox"/> Aquaculture |
| <input type="checkbox"/> <input type="checkbox"/> Seafood Processing |
| <input type="checkbox"/> <input type="checkbox"/> Industry |
| <input type="checkbox"/> <input type="checkbox"/> Recreation, Contact |
| <input type="checkbox"/> <input type="checkbox"/> Recreation, Secondary |
| <input type="checkbox"/> <input type="checkbox"/> Fish, Shellfish, Wildlife |
| <input type="checkbox"/> <input type="checkbox"/> Harvest of Fish, Shellfish |

Support of Designated Uses:

- | |
|--|
| <input type="checkbox"/> All Uses Fully Supported, no sources present |
| <input type="checkbox"/> All Uses Fully Supported, sources present |
| <input type="checkbox"/> One or More Uses Threatened |
| <input checked="" type="checkbox"/> One or More Uses Partially Supported |
| <input type="checkbox"/> One or More Uses Not Supported |

Trophic Status:

- | |
|---|
| <input type="checkbox"/> Oligatrophic |
| <input type="checkbox"/> Mesatrophic |
| <input type="checkbox"/> Eutrophic |
| <input type="checkbox"/> Hypereutrophic |
| <input type="checkbox"/> Dystrophic |
| <input type="checkbox"/> Unknown |

Trophic Trend:

- | |
|--|
| <input type="checkbox"/> Improving |
| <input type="checkbox"/> Stable |
| <input type="checkbox"/> Deteriorating |

*** TOXICS ***

Monitored for Toxics: ☐ Yes , ☒ No

Types of Toxics Monitoring:

- | | |
|---|--|
| <input type="checkbox"/> 1 Organics in water column | <input type="checkbox"/> 10 Metals in sediments |
| <input type="checkbox"/> 2 Organics in sediments | <input type="checkbox"/> 11 Metals in fish tissue |
| <input type="checkbox"/> 3 Organics in fish tissue | <input type="checkbox"/> 12 Metals in discharges |
| <input type="checkbox"/> 4 Organics in discharges | <input type="checkbox"/> 13 Other inorganics in H2O col |
| <input type="checkbox"/> 5 Pesticides in water column | <input type="checkbox"/> 99 Other inorganics in sedimnt |
| <input type="checkbox"/> 6 Pesticides in sediments | <input type="checkbox"/> 99 Other inorganics in fish ts |
| <input type="checkbox"/> 7 Pesticides in fish tissue | <input type="checkbox"/> 14 Other inorganics in dscgs |
| <input type="checkbox"/> 8 Pesticides in discharges | <input type="checkbox"/> 15 Toxicity testing of water |
| <input type="checkbox"/> 9 Metals in water column | <input type="checkbox"/> 16 Toxicity testing of sediment |
| | <input type="checkbox"/> 17 Toxicity testing of dscgs |

Pollutants: (H = High, M = Medium, S = Slight)

<input type="checkbox"/> 1 Unknown toxicity		
<input type="checkbox"/> 2 Pesticides	Type	
<input type="checkbox"/> 3 Priority organics	Type	
<input type="checkbox"/> 4 Nonpriority organ	Type	
<input type="checkbox"/> 5 Metals	Type	
<input type="checkbox"/> 6 Ammonia	<input type="checkbox"/> 12 Organic enrichment	<input type="checkbox"/> 18 Radiation
<input type="checkbox"/> 7 Chlorine	<input type="checkbox"/> 13 Salinity/TDS/Chlor	<input type="checkbox"/> 19 Oil and Grease
<input type="checkbox"/> 8 Other inorganics	<input type="checkbox"/> 14 Thermal modificatn	<input type="checkbox"/> 20 Taste and Odor
<input type="checkbox"/> 9 Nutrients	<input type="checkbox"/> 15 Flow alteration	H_21 Suspended solids
<input type="checkbox"/> 10 pH	<input type="checkbox"/> 16 Habitat alteration	<input type="checkbox"/> 22 Noxious aqua plants
H_11 Siltation	<input type="checkbox"/> 17 Pathogens	H_23 Filling and drain

Pollutant Categories: (H = High, M = Medium, S = Slight)

Point Sources

☐ 1 Industrial
☐ 2 Minicipal
☐ 3 Municipal pretreatment
☐ 4 Combined sewers
☐ 5 Storm sewers

Nonpoint Sources

M_9 Unspecified

Agriculture

☐ 11 Non-irrig crop production
☐ 12 Irrigated crop production
☐ 13 Specialty crop production
☐ 14 Pasture land
☐ 15 Range Land
☐ 16 Feedlots
☐ 17 Aquaculture
☐ 18 Animal holding areas

Silviculture

☐ 21 Harvest, restoration
☐ 22 Forest management
☐ 23 Road construction/maint

Construction

☐ 31 Highway/road/bridge
H_32 Land development

Urban Runoff

☐ 41 Storm sewers
☐ 42 Combined sewers
☐ 43 Surface runoff

Source Unknown

☐ 90 Source unknown

Resource extraction/exploration

☐ 51 Surface mining
☐ 52 Subsurface mining
H_53 Placer mining
☐ 54 Dredge mining
☐ 55 Petroleum activities
☐ 56 Mill tailings
☐ 57 Mine tailings

Land Disposal (Permitted Activities)

☐ 61 Sludge
☐ 62 Wastewater
☐ 63 Landfills
☐ 64 Industrial land treatment
☐ 65 Onsite wastewater systems
☐ 66 Hazardous waste

Hydromodification

☐ 71 Channelization
☐ 72 Dredging
☐ 73 Dam Construction
☐ 74 Flow regulation/modification
☐ 75 Bridge Construction
☐ 76 Removal of riparian vegetation
☐ 77 Streambank modification

Other

☐ 81 Atmospheric deposition
☐ 82 Waste storage/storage tank leaks
☐ 83 Highway maintenance and runoff
☐ 84 Spills
☐ 85 In-place contaminants
☐ 86 Natural
☐ 87 Recreational activities
☐ 88 Upstream impoundment
☐ 89 Septic tank seepage

*** FISH AND SHELLFISH CONTAMINATION ***

Page 4 of 5

Fish and Shellfish Contamination:

- ☒ 0 None detected
- ☐ 1 Contaminated fish
- ☐ 2 Fishing advisory
- ☐ 3 Fishing ban
- ☐ 4 Fish abnormalities
- ☐ 5 Shellfish restrictions due to pathogens
- ☐ 6 Fish kill

*** POINT AND NONPOINT SOURCES ***

1 NPDES Permit Number: _____
NPDES Permit Name: _____
Causes Nonattainment: ☐ Yes, ☐ No, Pollutant _____

2 NPDES Permit Number: _____
NPDES Permit Name: _____
Causes Nonattainment: ☐ Yes, ☐ No, Pollutant _____

3 NPDES Permit Number: _____
NPDES Permit Name: _____
Causes Nonattainment: ☐ Yes, ☐ No, Pollutant _____

1 Nonpoint Source Name: _____
Nonpoint Source Type: _____
Nonpoint Source Description: _____

2 Nonpoint Source Name: _____
Nonpoint Source Type: _____
Nonpoint Source Description: _____

3 Nonpoint Source Name: _____
Nonpoint Source Type: _____
Nonpoint Source Description: _____

[Including extent of impairment of uses; significance of impacts on public health and the environment; water quality trend; efforts to control pollutants; current priority for developing pollutant controls; and adequacy of data]

USFS CHUGACH MINES
CROW CR.
FALLS CR.
JUNEAU CR.
MILLS CR.
Summit CR.
Bettles Bay
Resurrection CR.

United States
Department of
Agriculture

Forest
Service

Chugach
National
Forest

3301 "C" Street
Suite 300
Anchorage, AK 99503-3998

Reply to: 2800/2160

Date: January 27, 1995

RECEIVED

FEB - 1 1995

Via ~~air~~ mail

DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

Eric Decker
Water Quality Management Section
Department of Environmental Conservation
410 Willoughby Ave, Suite 105
Juneau, AK 99801-1795

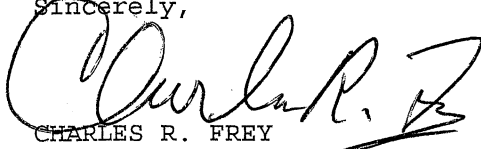
Re: Requested mine hazard information

Dear Mr. Decker:

Enclosed is the information you requested in a telephone call to Carol Huber, Forest Geologist, on January 24, 1995. It includes reports of inactive mine hazards for the mines which may potentially affect the waterbodies you identified. These waterbodies include the following: Crow Creek, Falls Creek, Juneau Creek, Mills Creek, Summit Creek, Bettles Bay, and Resurrection Creek. In no case has water quality sampling indicated State water quality violations on any of the identified waterbodies.

I understand you have a February 1, 1995, deadline for receipt of these reports. I hope this information meets your needs. If you have questions or further information needs, don't hesitate to contact us again. Call Carol Huber, Forest CERCLA Coordinator, at (907) 271-2541 for additional information concerning Abandoned and Inactive Mine Hazards, or Dave Blanchet, Forest hydrologist at (907) 271-2538, for information concerning water quality on the Forest.

Sincerely,


CHARLES R. FREY
Forest Supervisor

Enclosure

cc:

Dave Blanchet
Glacier District Ranger
Seward District Ranger
RO CERCLA Coordinator, Betsy Walatka

RO Watershed

Mike Keene: RO w/enclosure

Tim Rumsfeld: Alaska Department of Environmental Conservation, w/enclosure

Southcentral Regional Office

Suite 1334 3601 C Street

Anchorage, Ak 99503

Mitch Henning: Alaska Department of Natural Resources, w/enclosure

~~Division of Mining and Water Management~~

Suite 822 3601 C. Street

Anchorage, AK 99503

950126 1300 MSW 2160\2800 CH